What is claimed is:

1. A method for fabricating a CMOS image sensor including a low voltage buried photodiode and a transfer transistor, the method comprising:

a) forming a field oxide for defining active area and field area on certain area of an epitaxial layer formed on a substrate, and forming a gate of transfer transistor on the epitaxial layer of the active area;

b) forming the low voltage buried photodiode doping region in alignment with one side of the gate of transfer transistor and field oxide;

c) forming a spacer insulation layer by stacking layers of oxide and nitride over the whole structure;

d) forming a spacer block mask to open areas excluding doping region for the low voltage buried photodiode; and

e) removing the spacer block mask, and forming a floating diffusion region on other side of the transfer transistor.

2. The method for fabricating CMOS image sensor as recited in claim 1, wherein the oxide layer has a thickness ranging from about 200Å to about 2000Å, and the nitride layer has a thickness ranging from about 200Å to about 1000Å.

3. The method for fabricating CMOS image sensor as recited in claim 1, wherein part b) further comprises: sequentially performing n-type ion implantation and p-type ion implantation using a mask for opening doping region of the low voltage buried photodiode.

4. The method for fabricating CMOS image sensor as recited in claim 3, wherein the spacer block mask is formed by a mask for opening doping region for the photodiode and a negative photoresist.

5. A method for fabricating CMOS image sensor comprising low voltage buried photodiode and transfer transistor, the method comprising:

a) forming a field oxide for defining active area and field area on certain area of an epitaxial layer formed on a substrate, and forming a gate of transfer transistor on the active layer of the epitaxial layer;

b) forming an ion implantation oxide layer on top of epitaxial layer between gates of the transistor, and forming doping region for the low voltage buried photodiode inside the epitaxial layer;

c) forming a sacrificial nitride on the whole structure, and forming a spacer insulation layer on the sacrificial nitride layer;

d) forming spacers on both sidewalls of transistor by blanket etching; and

e) removing residuals of said sacrificial nitride from surface of the photodiode, and forming a floating diffusion region on other side of the transfer transistor.

6. The method for fabricating CMOS image sensor as recited in claim 5, wherein the ion implantation oxide layer has a thickness ranging from about 100Å to about 500Å, and the sacrificial nitride has a thickness ranging from about 100Å to about 500Å.

7. The method for fabricating CMOS image sensor as recited in claim 5, wherein said step of forming doping region of low voltage buried photodiode is further characterized by sequentially performing n-type ion implantation and p-type ion implantation using a mask for opening doping region for the low voltage buried photodiode.

8. A method for fabricating CMOS image sensor including a low voltage buried photodiode and a transfer transistor, the method comprising:

a) forming a field oxide for defining active area and field area on certain area of an epitaxial layer formed on a substrate, and forming a gate of transistor on the epitaxial layer of the active area;

b) forming an ion implantation oxide layer on top of epitaxial layer between gates of the transistor and the field oxide, and forming a doping region for the low voltage buried photodiode inside the epitaxial layer;

c) forming a sacrificial nitride on the whole structure, and forming a spacer insulation layer on the sacrificial nitride layer;

d) forming spacers on both sidewalls of transistor by blanket etching; and

e) forming a floating diffusion region on other side of the transfer transistor.

9. A CMOS image sensor made in accordance with the method of claim 1.

10. A CMOS image sensor made in accordance with the method of claim 5.

11. A CMOS image sensor made in accordance with the method of claim 8.